

BBNA Tribal Energy Efficiency & Conservation Block Grant Program

Administered by Alaska Building Science Network

Ekuk Final Report



Community Summary

Sixty (60) Ekuk Village Council Tribal Members received energy efficient lighting upgrades and additional energy efficient technologies.

Retrofits Completed: August 2012

Village-Wide Energy Efficient Retrofit Summary:

• Installed 122 LED A19 bulbs	
• Distributed 60 Energy Conservation Kits	
• Distributed 1 Insulation Blow-fill Machine	
• Projected Annual Electrical Savings (kWh):	11,316
• Total Projected Annual Energy Cost Savings:	\$4,411¹
• Total village-wide In-kind contribution:	\$1,081
• Total project cost including In-kind contributions:	\$31,338
• Simple Payback (including In-kind contributions):	7.10 years

¹ kWh Rate [used to calculate electrical cost savings] for Lighting Measures (State of AK - AEA PCE Program Report FY 2011 avg.): \$0.39

60 Households LED A19 Bulbs

Lighting Retrofit Summary:



Materials Installed

LED A19 bulb – 7 watt

Quantity

122

- | | |
|---|------------|
| • Pre-retrofit energy use: | 7.320 kW |
| • Post-retrofit energy use: | 0.854 kW |
| • Energy savings projection: | 6.466 kW |
| • Pre-retrofit to post retrofit energy reduction: | 88 percent |
| • Estimated Annual Savings: | 11,316 kWh |

Hours/day (250 days/year)	Electrical Savings (\$)	Avoided Diesel (gal)	Avoided Diesel (\$)
4 Hours/day	\$217.80	32.12	\$113.69
7 Hours/day	\$381.15	56.20	\$198.96
10 Hours/day	\$544.50	80.29	\$284.23
2,000 Hours/year	\$435.60	64.23	\$227.39

The **LED “A19”** screw-in style light bulb is among the latest technologies available for lighting energy efficiency. The bulb utilizes Light Emitting Diode (LED) technology which operates more efficiently than the standard Incandescent bulb or spiral-type Compact Fluorescent bulb (CFL). This “60 watt equivalent” LED A19 bulb uses **8 watts** to produce the same light output (lumens) as a **60 watt** incandescent bulb. This particular LED A19 also lasts up to 50,000 hours versus average 8,000 hours for a Compact Fluorescent bulb. In addition, this “outdoor rated” version will operate both in wet and cold weather conditions and will not struggle to turn on in winter.

Distribution of Energy Efficient Technologies



1 – Insulation Blow-fill Machine ("Cool Machine 1500" w/accessories) purchased for Ekuk Village Council

60 – Energy Conservation Kits distributed to Ekuk Village Council member households

Conservation Kit Contents:

13 Watt Energy Star CFLs (Qty. 5)

18 Watt Energy Star CFLs (Qty. 5)

LED Nightlights (Qty. 4)

Bi-Metal Refrigerator/Freezer Thermometer (Qty. 2)

Showerhead (Chrome, 2.0 GPM, Qty. 1)

2.0 GPM Dual Swivel on/off (kitchen sink Aerator, Qty. 1)

1.0 GPM (bathroom sink Aerator, Qty. 2)